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Published to advance the Science of cold-blooded vertebrates

THE FOOD OF *Mustelus canis* (Mitchill) IN MID-SUMMER

The following notes were made from the examination of the stomach contents of 102 specimens of *Mustelus canis* (Mitchill) taken at Atlantic City, N. J., between August 5 and 17, 1920, in the pound nets operated from Young's Pier. They varied in length from 30 to 64 cm., the model length being 38 cm., although only a few reached near the upper limit, and except in the largest specimens, the gonads were undeveloped. The following data indicates the number of stomachs containing each constituent of food:—

Material:—Fish, no. of stomachs, 10. Crabs, 44. Unidentified crustaceans, 4. *Nereis* sp., 1. Univalves, 3. Eel Grass, 24. Various Sea Weeds, 5. Debris, 21.

Among the fish remains were two swim-bladders of large fish, which were very likely picked out of the refuse from vessels. A specimen of *Fundulus heteroclitus macrolepidotus* (Walbaum) about 6 cm. long was taken from a 37 cm. *Mustelus*. The crabs were mostly of small non-commercial species, although parts of a few Blue Crabs were found in some.

The vegetable content was possibly accidental, it being ingulfed along with the small invertebrates

which are so often found among marine vegetation. A piece of bark, which appeared to be of an oak, was found in one stomach. Several fish contained considerable gas in their alimentary tract. This could not have been due to mortification as the specimens were examined on capture. It was probably generated by the processes of digestion.

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NOTES ON A POSTLARVAL SCIAENOID FISH WITH THREE ANAL SPINES

A young specimen of the common Californian sciaenoid, *Genyonemus lineatus* Ayres, 34 mm. long to caudal, found dead on the beach at Montecito, on the mainland shore of the Santa Barbara Channel, on July 12, 1916, has three unquestionable anal spines: the third is small, and apparently characteristic only of the young, disappearing with age (a young *Seriphis politus* from Laguna Beach, California, 52 mm. long, taken on December 27, 1914, has only two anal spines). The entire family Sciaenidae is currently characterized by "the presence of never more than two anal spines," but the Haemulidae, probably ancestral to the Sciaenidae, normally possess three anal spines, the number typical of most Acanthopterygii.

This young individual further differs widely from the adult in not having the posterior dorsal spines greatly shortened, the lowest being longer than half the orbital length; in the greater length of the second anal spine (3.0 in head), and in the development of coarse flat spines along the preopercular margin, of which those at the angle are directed downward.

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